

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	40296-0042
	First Inventor	Ta Yun KIM
	Title	S If-Refr sh Apparatus and M thod
	Express Mail Label No.	

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450
---	---

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
 (Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification [Total Pages 39]
 (preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed-Sponsored R&D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Detailed Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 CFR 113) [Total Sheets 15]
5. ☒ Oath or Declaration [Total Sheets 3]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ Copy from a prior application (37 CFR 1.63(d))
 (for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
 Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☒ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Form (CRF)
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ Paper
 - c. ☐ Statements verifying identity of above copies


- | ACCOMPANYING APPLICATION PARTS | |
|--|--|
| 9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s)) | |
| 10. <input type="checkbox"/> 37 CFR 3.73(b) Statement (when there is an assignee) | <input type="checkbox"/> Power of Attorney |
| 11. <input type="checkbox"/> English Translation Document (if applicable) | |
| 12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 | <input type="checkbox"/> Copies of IDS Citations |
| 13. <input type="checkbox"/> Preliminary Amendment | |
| 14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) | |
| 15. <input checked="" type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) | |
| 16. <input type="checkbox"/> Nonpublication Request under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/Sb/35 or its equivalent. | |
| 17. <input type="checkbox"/> Other: | |

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.

Prior application information: Examiner Art Unit:

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number		26633		or <input type="checkbox"/> Correspondence address below	
Name					
Address					
City	State	Zip Code			
Country	Telephone	Fax			
Name (Print/Type)	Johnny A. Kumar		Registration No. (Attorney/Agent)	34,649	
Signature			Date	December 8, 2003	

This collection of information is required by 37 C.F.R. 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 C.F.R. 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions by reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



120803
10281 U.S. PTO

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

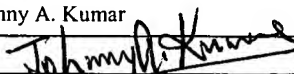
Approved for use through 04/30/2003. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2003 <i>Effective 01/01/2003. Patent fees are subject to annual revision.</i>		Complete if Known	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	
		Unassigned	
		Filing Date	
		December 8, 2003	
		First Named Inventor	
		Tae Yun KIM	
TOTAL AMOUNT OF PAYMENT (\$) 810.00		Examiner Name	
		Unassigned	
		Art Unit	
		Unassigned	
		Attorney Docket No.	
		40296-0042	

METHOD OF PAYMENT (check one) <input checked="" type="checkbox"/> Check <input type="checkbox"/> Credit card <input type="checkbox"/> Money Order <input type="checkbox"/> Other <input type="checkbox"/> None <input type="checkbox"/> Deposit Account: Deposit Account Number: 08-1641 (Docket No. 40296-0042) Deposit Account Name: Heller Ehrman White & McAuliffe LLP The Commissioner is authorized to: (check all that apply) <input type="checkbox"/> Charge fee(s) indicated below <input checked="" type="checkbox"/> Credit any overpayments <input checked="" type="checkbox"/> Charge any additional fee(s) during the pendency of this application <input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.	FEE CALCULATION (continued) 3. ADDITIONAL FEES <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Large Fee Code</th> <th>Entity Fee (\$)</th> <th>Small Fee Code</th> <th>Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>1051</td><td>130</td><td>2051</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>1052</td><td>50</td><td>2052</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr> <tr><td>1053</td><td>130</td><td>1053</td><td>130</td><td>Non-English specification</td><td></td></tr> <tr><td>1812</td><td>2,520</td><td>1812</td><td>2,520</td><td>For filing a request for <i>ex parte</i> reexamination</td><td></td></tr> <tr><td>1804</td><td>920*</td><td>1804</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>1805</td><td>1,840*</td><td>1805</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>1251</td><td>110</td><td>2251</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>1252</td><td>420</td><td>2252</td><td>210</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>1253</td><td>950</td><td>2253</td><td>475</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>1254</td><td>1,480</td><td>2254</td><td>740</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>1255</td><td>2,010</td><td>2255</td><td>1,005</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>1401</td><td>330</td><td>2401</td><td>165</td><td>Notice of Appeal</td><td></td></tr> <tr><td>1402</td><td>330</td><td>2402</td><td>165</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>1403</td><td>290</td><td>2403</td><td>145</td><td>Request for oral hearing</td><td></td></tr> <tr><td>1451</td><td>1,510</td><td>1451</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>1452</td><td>110</td><td>2452</td><td>55</td><td>Petition to revive - unavoidable</td><td></td></tr> <tr><td>1453</td><td>1,330</td><td>2453</td><td>665</td><td>Petition to revive - unintentional</td><td></td></tr> <tr><td>1501</td><td>1,330</td><td>2501</td><td>665</td><td>Utility issue fee (or reissue)</td><td></td></tr> <tr><td>1502</td><td>480</td><td>2502</td><td>240</td><td>Design issue fee</td><td></td></tr> <tr><td>1503</td><td>640</td><td>2503</td><td>320</td><td>Plant issue fee</td><td></td></tr> <tr><td>1460</td><td>130</td><td>1460</td><td>130</td><td>Petitions to the Commissioner</td><td></td></tr> <tr><td>1807</td><td>50</td><td>1807</td><td>50</td><td>Processing fee under 37 CFR 1.17(q)</td><td></td></tr> <tr><td>1806</td><td>180</td><td>1806</td><td>180</td><td>Submission of Information Disclosure Stmt</td><td></td></tr> <tr><td>8021</td><td>40</td><td>8021</td><td>40</td><td>Recording each patent assignment per property (times number of properties)</td><td>40</td></tr> <tr><td>1809</td><td>770</td><td>2809</td><td>385</td><td>Filing a submission after final rejection (37 CFR 1.129(a))</td><td></td></tr> <tr><td>1810</td><td>770</td><td>2810</td><td>385</td><td>For each additional invention to be examined (37 CFR 1.129(b))</td><td></td></tr> <tr><td>1801</td><td>770</td><td>2801</td><td>385</td><td>Request for Continued Examination (RCE)</td><td></td></tr> <tr><td>1802</td><td>900</td><td>1802</td><td>900</td><td>Request for expedited examination of a design application</td><td></td></tr> </tbody> </table>	Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid	1051	130	2051	65	Surcharge - late filing fee or oath		1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet		1053	130	1053	130	Non-English specification		1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination		1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action		1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action		1251	110	2251	55	Extension for reply within first month		1252	420	2252	210	Extension for reply within second month		1253	950	2253	475	Extension for reply within third month		1254	1,480	2254	740	Extension for reply within fourth month		1255	2,010	2255	1,005	Extension for reply within fifth month		1401	330	2401	165	Notice of Appeal		1402	330	2402	165	Filing a brief in support of an appeal		1403	290	2403	145	Request for oral hearing		1451	1,510	1451	1,510	Petition to institute a public use proceeding		1452	110	2452	55	Petition to revive - unavoidable		1453	1,330	2453	665	Petition to revive - unintentional		1501	1,330	2501	665	Utility issue fee (or reissue)		1502	480	2502	240	Design issue fee		1503	640	2503	320	Plant issue fee		1460	130	1460	130	Petitions to the Commissioner		1807	50	1807	50	Processing fee under 37 CFR 1.17(q)		1806	180	1806	180	Submission of Information Disclosure Stmt		8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40	1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))		1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))		1801	770	2801	385	Request for Continued Examination (RCE)		1802	900	1802	900	Request for expedited examination of a design application	
Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid																																																																																																																																																																										
1051	130	2051	65	Surcharge - late filing fee or oath																																																																																																																																																																											
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet																																																																																																																																																																											
1053	130	1053	130	Non-English specification																																																																																																																																																																											
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination																																																																																																																																																																											
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action																																																																																																																																																																											
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action																																																																																																																																																																											
1251	110	2251	55	Extension for reply within first month																																																																																																																																																																											
1252	420	2252	210	Extension for reply within second month																																																																																																																																																																											
1253	950	2253	475	Extension for reply within third month																																																																																																																																																																											
1254	1,480	2254	740	Extension for reply within fourth month																																																																																																																																																																											
1255	2,010	2255	1,005	Extension for reply within fifth month																																																																																																																																																																											
1401	330	2401	165	Notice of Appeal																																																																																																																																																																											
1402	330	2402	165	Filing a brief in support of an appeal																																																																																																																																																																											
1403	290	2403	145	Request for oral hearing																																																																																																																																																																											
1451	1,510	1451	1,510	Petition to institute a public use proceeding																																																																																																																																																																											
1452	110	2452	55	Petition to revive - unavoidable																																																																																																																																																																											
1453	1,330	2453	665	Petition to revive - unintentional																																																																																																																																																																											
1501	1,330	2501	665	Utility issue fee (or reissue)																																																																																																																																																																											
1502	480	2502	240	Design issue fee																																																																																																																																																																											
1503	640	2503	320	Plant issue fee																																																																																																																																																																											
1460	130	1460	130	Petitions to the Commissioner																																																																																																																																																																											
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)																																																																																																																																																																											
1806	180	1806	180	Submission of Information Disclosure Stmt																																																																																																																																																																											
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40																																																																																																																																																																										
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))																																																																																																																																																																											
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))																																																																																																																																																																											
1801	770	2801	385	Request for Continued Examination (RCE)																																																																																																																																																																											
1802	900	1802	900	Request for expedited examination of a design application																																																																																																																																																																											

FEE CALCULATION																																																																															
1. BASIC FILING FEE <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Large Fee Code</th> <th>Entity Fee (\$)</th> <th>Small Fee Code</th> <th>Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>1001</td><td>770</td><td>2001</td><td>385</td><td>Utility filing fee</td><td>770</td></tr> <tr><td>1002</td><td>340</td><td>2002</td><td>170</td><td>Design filing fee</td><td></td></tr> <tr><td>1003</td><td>530</td><td>2003</td><td>265</td><td>Plant filing fee</td><td></td></tr> <tr><td>1004</td><td>770</td><td>2004</td><td>385</td><td>Reissue filing fee</td><td></td></tr> <tr><td>1005</td><td>160</td><td>2005</td><td>80</td><td>Provisional filing fee</td><td></td></tr> <tr> <td colspan="5" style="text-align: right;">SUBTOTAL (1)</td> <td>(\$) 770</td> </tr> </tbody> </table>						Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid	1001	770	2001	385	Utility filing fee	770	1002	340	2002	170	Design filing fee		1003	530	2003	265	Plant filing fee		1004	770	2004	385	Reissue filing fee		1005	160	2005	80	Provisional filing fee		SUBTOTAL (1)					(\$) 770																																
Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid																																																																										
1001	770	2001	385	Utility filing fee	770																																																																										
1002	340	2002	170	Design filing fee																																																																											
1003	530	2003	265	Plant filing fee																																																																											
1004	770	2004	385	Reissue filing fee																																																																											
1005	160	2005	80	Provisional filing fee																																																																											
SUBTOTAL (1)					(\$) 770																																																																										
2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Extra Claims</th> <th colspan="2">Fee from below</th> <th colspan="2">Fee Paid</th> </tr> </thead> <tbody> <tr> <td>Total Claims</td> <td>13</td> <td>-20** =</td> <td>0</td> <td>x</td> <td>18</td> <td>=</td> <td>0</td> </tr> <tr> <td>Independent Claims</td> <td>3</td> <td>-3** =</td> <td>0</td> <td>x</td> <td>86</td> <td>=</td> <td>0</td> </tr> <tr> <td colspan="2">Multiple Dependent</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Large Fee Code</th> <th>Entity Fee (\$)</th> <th>Small Fee Code</th> <th>Entity Fee (\$)</th> <th>Fee Description</th> <th>Fee Paid</th> </tr> </thead> <tbody> <tr><td>1202</td><td>18</td><td>2202</td><td>9</td><td>Claims in excess of 20</td><td></td></tr> <tr><td>1201</td><td>86</td><td>2201</td><td>43</td><td>Independent claims in excess of 3</td><td></td></tr> <tr><td>1203</td><td>290</td><td>2203</td><td>145</td><td>Multiple dependent claim, if not paid</td><td></td></tr> <tr><td>1204</td><td>86</td><td>2204</td><td>43</td><td>**Reissue independent claims over original patent</td><td></td></tr> <tr><td>1205</td><td>18</td><td>2205</td><td>9</td><td>**Reissue claims in excess of 20 and over original patent</td><td></td></tr> <tr> <td colspan="5" style="text-align: right;">SUBTOTAL (2)</td> <td>(\$)</td> </tr> </tbody> </table>								Extra Claims		Fee from below		Fee Paid		Total Claims	13	-20** =	0	x	18	=	0	Independent Claims	3	-3** =	0	x	86	=	0	Multiple Dependent								Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid	1202	18	2202	9	Claims in excess of 20		1201	86	2201	43	Independent claims in excess of 3		1203	290	2203	145	Multiple dependent claim, if not paid		1204	86	2204	43	**Reissue independent claims over original patent		1205	18	2205	9	**Reissue claims in excess of 20 and over original patent		SUBTOTAL (2)					(\$)
		Extra Claims		Fee from below		Fee Paid																																																																									
Total Claims	13	-20** =	0	x	18	=	0																																																																								
Independent Claims	3	-3** =	0	x	86	=	0																																																																								
Multiple Dependent																																																																															
Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid																																																																										
1202	18	2202	9	Claims in excess of 20																																																																											
1201	86	2201	43	Independent claims in excess of 3																																																																											
1203	290	2203	145	Multiple dependent claim, if not paid																																																																											
1204	86	2204	43	**Reissue independent claims over original patent																																																																											
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent																																																																											
SUBTOTAL (2)					(\$)																																																																										

**or number previously paid, if greater; For Reissues, see above

SUBMITTED BY				Complete (if applicable)			
Name (Print/Type)		Johnny A. Kumar		Registration No. (Attorney/Agent)		34,649	
Signature				Date		December 8, 2003	
				Telephone		202-912-2000	
				Customer No.		26633	

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop ___, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.